



# **Twelve Trends Shaping Asia-Pacific Forestry in the 2020s**

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In alignment with APFNet's editorial convention, this report uses the term "economy/economies" when referring to regional entities.

## Abstract

The Asia-Pacific region is home to nearly two-thirds of the global population but contains less than one-fifth of the world's forest area, placing exceptional demand on forest ecosystems to deliver economic, social, and environmental benefits. Despite this pressure, the region stands apart from global trends due to a sustained net gain in forest area over the past three decades, largely driven by ambitious afforestation and reforestation efforts in East Asia.

The region's success in net forest area gain, however, masks critical challenges in forest composition and function. Much of the forest gain reflects rapid expansion of planted forests rather than recovery of naturally regenerating and effective protection of primary forests, which continue to decline in extent, biodiversity intactness and integrity.

This report identifies twelve interrelated trends shaping the forest sector in Asia and the Pacific during the 2020s. While not attempting to provide a complete compilation and analysis of all developments in the sector, it highlights major trends in the region in the current context. Beyond biophysical changes in the region's forests, the report explores the underlying drivers causing these shifts, including demographics and socioeconomic transformation, changes in forest governance, heightened expectations for sustainability and legality, technological advances, and geopolitical and trade disruptions. Rather than unfolding uniformly across the region, these trends interact differently across subregions and economies, producing highly uneven patterns of forest gain, loss, and use.

Climate change concerns have additionally become an increasingly prominent context for forest policy and management, influencing both the risks faced by forest ecosystems and the expectations placed upon them. Forests are now widely framed as contributors to climate mitigation and adaptation, and this framing has stimulated new forms of monitoring, finance, and restoration activity. In spite of such intense focus, climate-related initiatives have progressed at differing speeds, and their outcomes have varied – shaped by market conditions, institutional capacities, and broader economic forces.

Taken together, the trends explored in this report illustrate a forestry sector undergoing rapid change, characterized by both measurable gains and persistent vulnerabilities. By documenting these trends, the report provides a consolidated overview of the forces currently influencing forestry across one of the world's most complex and consequential regions.

## Abbreviations

ASEAN	Association of Southeast Asian Nations
APEC	Asia-Pacific Economic Cooperation
APFNet	Asia-Pacific Network for Sustainable Forest Management and Rehabilitation
CIFOR-ICRAF	Center for International Forestry Research - International Centre for Research in Agroforestry
EUDR	European Union Deforestation Regulation
FAO	Food and Agriculture Organization of the United Nations
FRA	Global Forest Resources Assessment
FSC	Forest Stewardship Council
GFW	Global Forest Watch
ITTO	International Trade and Timber Organization
LURC	Land Use Right Certificate
NDC	Nationally Determined Contributions
NTFP	Non-Timber Forest Product
OECD	Organisation for Economic Co-operation and Development
RECOFTC	The Center for People and Forests
TOF	Trees Outside Forests
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USDA	United States Department of Agriculture
VPA	Voluntary Partnership Agreement
WRI	World Resources Institute
WWF	World Wildlife Fund

## Introduction

Trends are developments or changes in conditions, or in the way that people behave. Some trends in the forest sector relate to the biophysical characteristics of the forest itself. Others relate to how forests are perceived and used.

Trends in the forest sector can occur naturally, such as when long-term changes in climate or weather patterns shift the geographical range of certain tree species or the species composition of forest stands. More commonly in today's world, however, forest sector trends are driven by human decisions and actions. Some human influences are exogenous to forestry *per se*, but nonetheless have significant impacts on forests and forestry (e.g., land-use changes, demographics, etc.). Others are direct influences, enacted by forestry officials and practitioners, that drive particular trends (e.g., policies enacted to stimulate reforestation or to encourage investment in wood processing). Human influences can range from being purposeful, carefully planned, and skillfully implemented, to being ill-conceived, haphazard, and even inadvertently triggering negative trends in forestry.

Some trends are most evident in how they shape forests themselves, while others have more to do with how humans use and interact with forests. Changes in society's demands and expectations related to forests shape trends in forest use, exploitation, management, and protection.

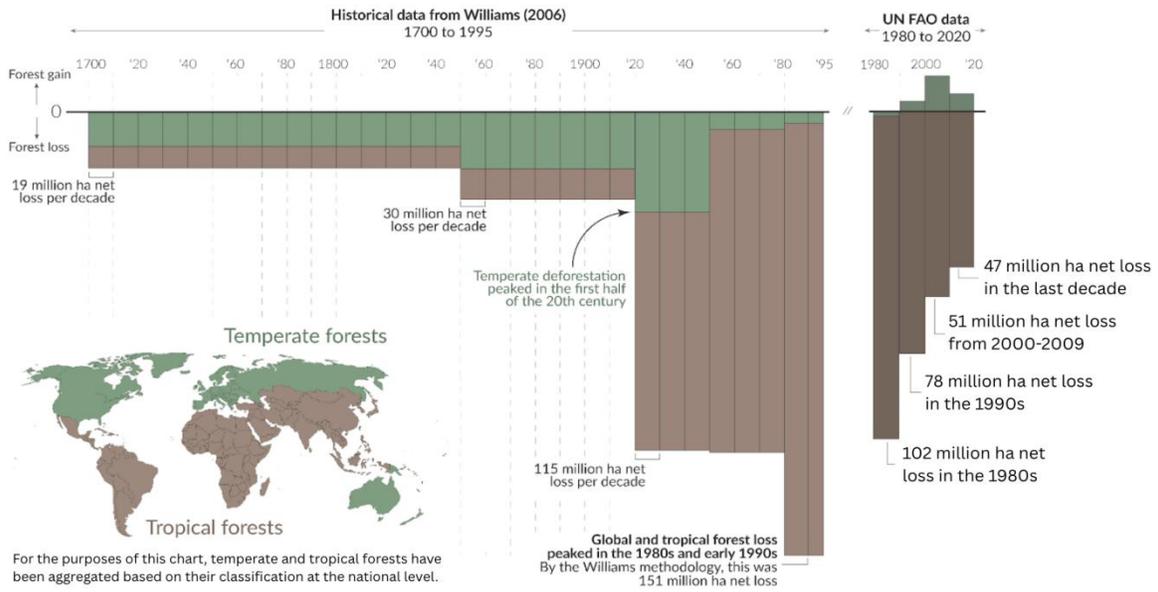
This report explores current trends in the forest sector in Asia and the Pacific. While not attempting to provide a complete compilation and analysis of all developments in the sector, it highlights the major trends shaping forests and forestry in the region in the current context.

Since the end of the last ice age 10,000 years ago, global forest losses were minimal until the 1700s and remained modest until the early 1900s when forest conversion dramatically accelerated (Figure 1). More than half of all forest losses globally have occurred in the last century alone (Kump, Kasting, & Crane, 2004).

For much of the twentieth century, over 100 million hectares of forest were lost per decade, with a large percentage of the deforestation occurring in tropical regions (Williams, 2003). This trend peaked in the 1980s and early 1990s and has steadily decreased over the past three decades. The annual rate of net forest loss fell from 10.7 million hectares in 1990-2000 to 4.12 million hectares in 2015-2025, as a result of slowing deforestation in some economies and the expansion of forest area in others (FAO, 2025).<sup>1</sup>

<sup>1</sup> Unless otherwise referenced, all forest-related statistical data presented in this report are drawn directly or calculated from the data in the Global Forest Resources Assessment 2025.

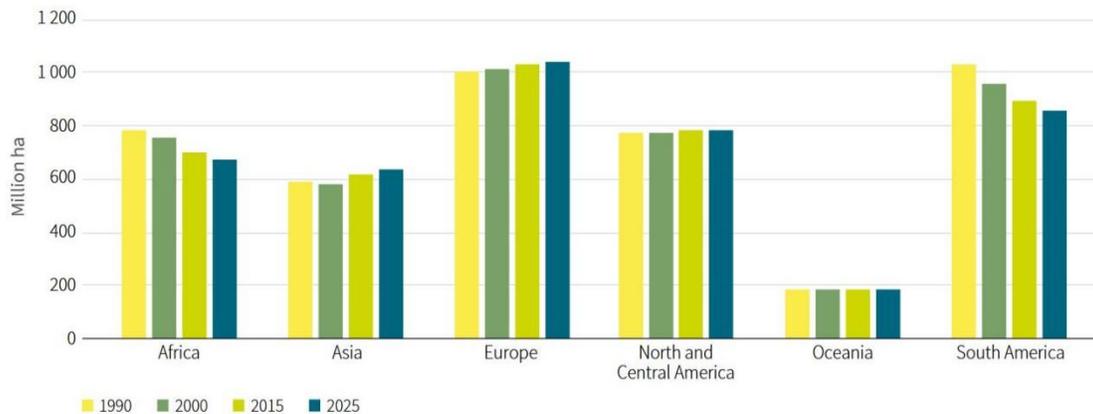
**Figure 1 Decadal Losses in Global Forest Over the Last Three Centuries**



Source: Image from Our World in Data; data sourced from Williams (2006) for first series and FAO FRA (1980-2020) for second series, as there is no single dataset applying a consistent methodology for deforestation over centuries.

As of 2025, the global forest area was estimated to be 4.14 billion hectares, or 32 percent of the world’s land surface. This is equivalent to 0.5 hectares of forest per capita, but forests are not evenly distributed. Fifty-six percent of all forests are located in the tropics and subtropics and 45 percent are located in temperate and boreal regions. More than half of the world’s forest area (54 percent) is located in just five economies – the Russian Federation, Brazil, Canada, United States of America, and China (in descending order by area), and two-thirds of all forests are found in ten economies.

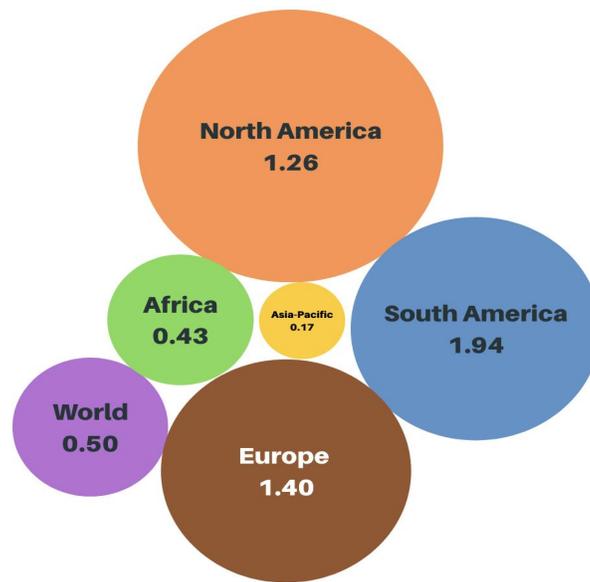
**Figure 2 Forest Area by Region, 1990-2025**



Source: FRA 2025.

Strikingly little of the world’s 4.14 billion hectares of forest is distributed in Asia and the Pacific (Figure 2). Despite being home to over 60 percent of the world’s population, Asia-Pacific has only about 814 million hectares of forest, accounting for just 19.6 percent of the world’s total. On a per capita basis, Asia-Pacific is the least forested region in the world, with only 0.17 hectares per person (Figure 3). Forests in the region are therefore under tremendous pressure to meet the needs of Asia-Pacific’s 4.8 billion people.

**Figure 3 World Regions by Forest Area Per Capita, 2025**



*Source: Data calculated from FAO Global Forest Resources Assessment (2025) and United Nations, Department of Economic and Social Affairs, Population Division (2026). Calculated assuming a regional population of 4.8 billion people in Asia and Oceania combined.*

Moreover, forest distribution is highly uneven across the region. Two-thirds of the Asia-Pacific region’s forests are in only four economies – China, Australia, Indonesia, and India. Notably, Oceania has a significantly higher area of forest per capita than the rest of the region, due to lower population densities, but among the economies of Oceania, forest distribution is also irregular.

**Box 1 Scope of and Definitions Used Within Report**

This report uses the regional and subregional groupings of economies and areas as adopted for the Global Forest Resources Assessment 2025 (FRA 2025). For purposes of presentation in this report, the Asia and Pacific region includes the 48 economies and areas encompassed in the FRA 2025 subregions of East Asia, South and Southeast Asia, and Western and Central

Asia (sometimes consolidated and reported as the Asia region), and 25 economies and areas of the FRA 2025 region of Oceania. These categories are elaborated in Annex I.

This report also adopts the terms and definitions used in the FRA 2025 report, most notably those for forest, naturally regenerating forest, primary forest, planted forest, plantation forest, deforestation, net change, and the various definitions related to forest ownership. These terms and definitions are described in the Forest Resources Assessment Working Paper 194 (FAO, 2023).

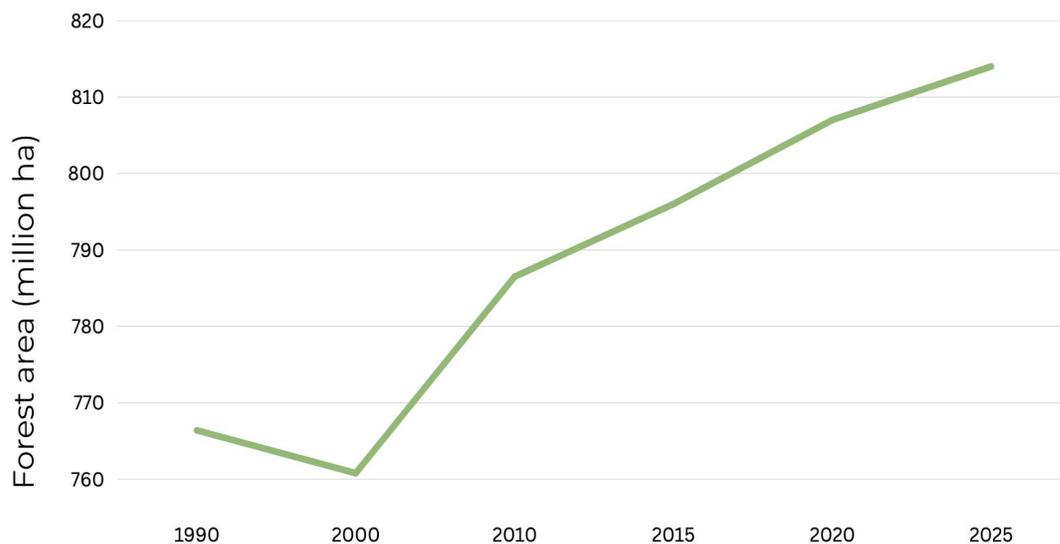
Unless otherwise cited, all statistical data presented in this report are drawn directly or calculated from the data presented in the Global Forest Resources Assessment 2025. There is not universal agreement among all individuals and organizations regarding the definitions adopted by FRA 2025, which sometimes results in differing conclusions and presentations related to forest conditions and trends. In instances where data presented in this report were derived from sources other than FRA 2025, the alternative sources are clearly cited. Where citations related to statistical data are not otherwise indicated, data presented have been derived from FRA 2025.

## Twelve Trends Shaping Asia-Pacific Forestry in the 2020s

### Trend 1 Regional Transition from Net Forest Loss to Net Gain

In contrast to most other regions of the world, Asia-Pacific has stood out with a steady upward trajectory in forest area over the past 25 years. This transition as a result of ambitious tree planting programs and a reduction in the pace of deforestation is an outstanding trait that has defined forestry in the Asia-Pacific region since 2000.

**Figure 4 Forest Transition in the Asia-Pacific Region, 1990-2025**



Source: FRA 2025.

The region has consistently led the world in forest expansion since 2000, increasing net forest area by 53.1 million hectares during that period (Figure 4). The years between 2000 to 2015 saw exceptional gains, with 2.36 million hectares of forests added in the region each of the 15 years of that period. This expansion was all the more impressive considering that it came at a time when most other parts of the world were experiencing steady declines in forest area. While the rate of forest gain in Asia and the Pacific has slowed slightly to 1.76 million hectares per year in the most recent decade (2015-2025), the region still leads the world in forest expansion.

From 2015 to 2025, six of the top ten pacesetters in the world with respect to annual net gain in forest area have been Asia-Pacific economies. These include China (by far the world's leader with 1.7 million hectares increase per year), India, Türkiye, Australia, Indonesia, and Vietnam.

In 2021, the 21 APEC economies confirmed that they had surpassed their near-term forest cover goal by collectively increasing forest cover by 27.9 million hectares between 2007 and 2020 (APEC, 2021). This accomplishment was a key target of the APEC 2020 Forest Cover Goal, which had been agreed in the 2007 Sydney APEC Leaders' Declaration on Climate Change, Energy Security and Clean Development – calling for an increase of forest cover in Asia by at least 20 million hectares. While celebrating the overall achievement in exceeding the 2020 target, APFNet and FAO noted that most of the gains had been achieved in only a few APEC economies and, regrettably, forest area had declined in 10 economies of the region over the period (APFNet and FAO, 2023).

Across Asia and the Pacific, only the *South and Southeast Asia* subregion experienced net forest loss between 2000 and 2025 – but, encouragingly, the rate of loss slowed to only about one-tenth that recorded between 1990 and 2000 (Table 1). This dramatic reduction in the pace of forest loss in the *South and Southeast Asia* subregion is mainly attributed to Indonesia, which curtailed its large forest losses of the 1990s (2.44 million hectares per year) and even reported a modest net gain of 94,100 hectares of forest annually over the most recent decade.

**Table 1 Forest Area of Asia and Oceania, 1990-2025**

Country/area	Forest area (1 000 ha)					
	1990	2000	2010	2015	2020	2025
East Asia	210 449	230 072	253 705	263 368	272 164	280 246
South and Southeast Asia	320 507	295 693	298 234	295 964	296 401	293 515
Western and Central Asia	51 045	51 970	53 417	54 454	55 364	56 267
<b>Asia</b>	<b>582 000</b>	<b>577 734</b>	<b>605 356</b>	<b>613 786</b>	<b>623 930</b>	<b>630 029</b>
<b>Oceania</b>	<b>184 416</b>	<b>183 050</b>	<b>181 119</b>	<b>182 499</b>	<b>183 303</b>	<b>183 898</b>
<b>WORLD</b>	<b>4 343 534</b>	<b>4 236 587</b>	<b>4 201 001</b>	<b>4 181 435</b>	<b>4 165 241</b>	<b>4 140 217</b>

Source: FRA 2025.

Unfortunately, the generally positive trends in net forest area achieved in Asia and Oceania are not consistent across the entire region. In Asia, 22 economies have increased forest area since 1990, while 8 economies reported no change, and 18 economies reported net forest loss. In Oceania, since 1990, the area of forest has increased in 11 economies, while 7 economies reported no change, and 7 reported forest loss.

While some economies have experienced only modest changes over the past 35 years, others have seen dramatic shifts. Since 1990, Fiji has increased forest cover by almost 21 percent, going from 51 percent of the economy covered in forest to 62 percent. Guam, Northern Mariana Islands, Palau, and Wallis and Futuna Islands also each experienced 7-8 percentage point increases in forest relative to total land area. In contrast, American Samoa experienced an 11 percentage point decrease.

Several economies in Asia have seen even greater fluctuations in forest relative to total land area. Most notably, Cambodia has gone from approximately 62 percent forest area coverage in 1990 to only 36 percent of total land in 2025. Myanmar also saw its forest area decline from 60 percent of total land area to 41 percent. Meanwhile, Vietnam experienced a 17 point rise in forest area relative to total land area, going from 30 percent forest cover in 1990 to 47 percent in 2025.<sup>2</sup>

### **Box 2 Different Lenses Can Lead to Diverging Narratives**

Different analytical frameworks can yield different portrayals of forest trends. Both the Global Forest Assessment (FRA) and Global Forest Watch (GFW) aggregate monitoring data into global statistics about forest change, but because each measures forests through

<sup>2</sup> Calculated from FRA 2025 database.

different lenses, these sources sometimes tell seemingly opposing narratives.

FRA uses a definition of “forest” that considers both biophysical criteria of tree stands and land-use criteria, based on economy self-reporting through national inventories. GFW provides data on “tree cover,” a metric derived from satellite data and biophysical criteria related to height, canopy cover and extent of trees (GFW, 2025).

A key difference in approaches derives from the methodology that FRA uses in defining forests based in part on land use. FRA tallies all areas as “forest” that are permanently or long-term designated as such, irrespective of canopy density changes from year to year. Areas that are temporarily devoid of trees – for example, recently logged or burned areas – are still classified as forest by FRA if they are expected to be regenerated in the near future (either by natural regeneration or planting of trees). Only if the land use changes (such as when forests are cleared and the land is converted to agriculture or when forests are taken over by urban sprawl) is the area considered by FRA to no longer be forest.

There are also differences in how FRA and GFW treat tree cover on agricultural lands, in agroforestry systems, and in urban areas. FRA does not record these areas as forest, even if they have extensive tree cover (such as exists in many urban parks). In contrast, GFW provides data on “tree cover” across all land-use categories. GFW does not adopt a specific definition of “forest” but rather reports on changes in tree cover.

Because of these differences, GFW may report high levels of “tree cover loss” in an area where FRA sees stable levels of forest land (e.g., selective logging that does not alter the land-use status). Conversely, GFW may detect “gain” in tree cover from expanding agroforestry, fruit orchards, or oil palm plantations – areas that would not be defined as forest in FRA reporting (Mongabay, 2015).

These methodological contrasts underscore that trends in “forest loss” and “net gain” (or “tree cover loss” and “gain”) are dependent on the metrics and scales chosen. Careful interpretation is therefore required when comparing datasets or deriving policy conclusions.

## **Trend 2 Rapid Expansion of Planted Forests**

While a reduction in the pace of the loss of naturally regenerating forest has clearly aided the region’s forest balance, the overriding factor driving the transition to net forest gain has been the rapid expansion of planted forests. Since 1990, the area of planted forests in Asia and the Pacific has increased 72.6 percent, expanding to an area of more than 150 million hectares – almost half of the world’s total.

Much of the region's net forest gain has been driven by large-scale afforestation and reforestation efforts in *East Asia*, although afforestation in *Western and Central Asia*, India, and Vietnam has also contributed substantially to these numbers.

Across the entire Asia-Pacific region, planted forests now comprise 18.6 percent of all forests, but excluding Oceania, the percentage of planted forests rises to fully 23 percent of all forests. Planted forests are particularly prevalent in the *East Asia* subregion, where they comprise 38 percent of all forests – the highest of any area of the world. In China, the extent of planted forests more than doubled, from 44.2 million hectares in 1990, to 92.6 million hectares in 2025, and now comprise 40.7 percent of the economy's forest estate.

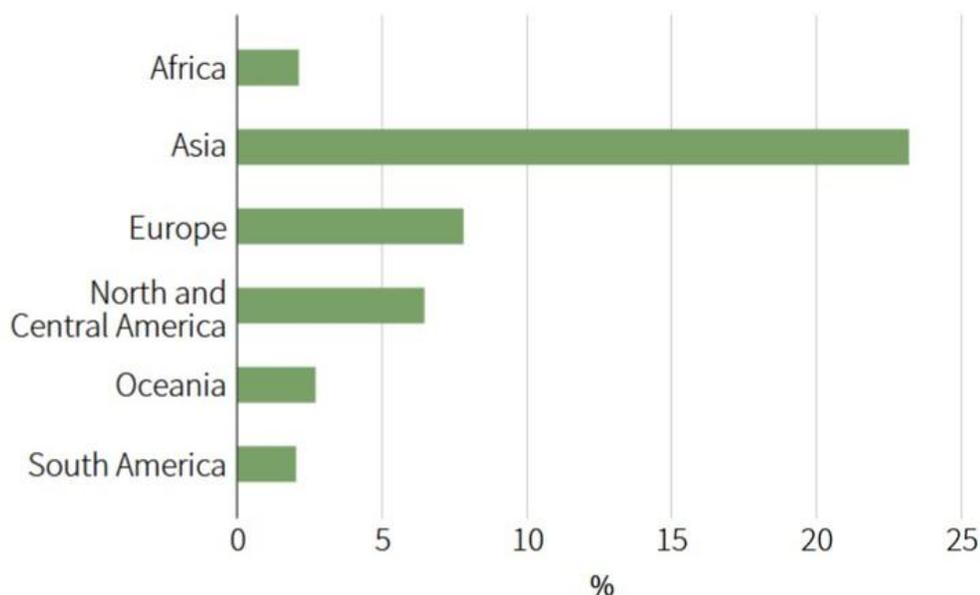
The pace of tree planting in the *East Asia* subregion peaked in the years between 2000 and 2015 at 1.6 million hectares per year, declining slightly to 1.4 million hectares in the most recent decade (2015-2025). Planting in the *South and Southeast Asia* subregion has accelerated since 2015.

A major subcategory of planted forests are *plantation forests* – i.e., those established with just one or two species and intensively managed primarily for the production of commercial timber, fiber, or energy. Such intensively managed plantation forests now total 108.5 million hectares in Asia and the Pacific, accounting for two-thirds of the world's total. Fast-growing species of eucalypts, acacia, poplar, and pine are particularly prevalent. Rubber plantations are also extensive in the *South and Southeast Asia* subregion and in southern China. Importantly, from the perspective of income and employment generation, many of the plantation forests of the region have been established by smallholders.

The successful establishment of such a vast estate of plantation forests in Asia and the Pacific is facilitating another important trend in the region – the shift from sourcing industrial roundwood from natural forests to planted forests. While definitive data are not yet available, it is believed that the percentage of forest raw material sourced from planted forests in the region is now more than 50 percent of the total.

While not reflected in the above figures for forests *per se*, *trees outside forests* (e.g., those planted in agroforests, home gardens, urban areas, along the edges of agricultural fields and along roads) are also expanding in most economies of the region and now contribute significantly to the industrial wood supply in several economies. Trees outside forests are particularly important in the *South and Southeast Asia* subregion as sources of raw material for both subsistence and industrial processing (Figure 5).

**Figure 5 Planted Forest As a Percentage of Total Forest Area, by Region, 2025**



Source: FRA 2025.

### **Box 3 Trees Outside Forests Increasingly Important in South and Southeast Asia**

Many areas in the densely populated economies of South and Southeast Asia are characterized by intense pressures on the land. Much of the naturally regenerating forest was cleared long ago and vast areas of agricultural land are needed to supply basic food needs. The result is a scarcity of large areas of tree cover that meet the standard definition of “forest” (either naturally regenerating or planted forest).

Yet, many areas of these “forest-poor” economies have a remarkable number of scattered trees and small patches of tree cover. FAO defines these “trees outside forests” (TOF) by exclusion: they are all trees and shrubs not classified as “forest” or “other wooded land,” such as those growing on agricultural, urban, or other non-forest lands, including scattered trees in fields, agroforestry systems, home gardens, orchards, roadside plantings, and urban parks.

TOF mainly supply subsistence needs of local people, especially fuelwood, charcoal, basic construction materials, and tree-derived foods and medicines. But, increasingly, TOF also contribute raw material for commercial purposes. TOF are especially important in this regard in Bangladesh, India, Nepal, Sri Lanka, and the Philippines.

India provides a prime example of a economy with low per capita forest area that is increasingly looking to TOF to help meet the economy’s need for wood and forest

products. Timber production from government-managed forests in India steadily declined from 10 million cubic meters in the 1970s to 4 million cubic meters in the 1990, and further reduced to just 1.5 million cubic meters in 2020. Resourceful companies and individuals have steadily shifted to TOF as a source of raw material for the wood sector (Sapra, 2025).

According to the India State of Forest Report 2023, the total extent of area under TOF in India is estimated at 30.7 million hectares, of which 12.8 million hectares are under agroforestry systems. Between 2013 and 2023, TOF increased by 3.7 million hectares. In addition to meeting subsistence needs of millions of rural Indians, these TOF areas are now supplying an astonishing volume of logs to the economy's wood industry. Biennial state forest reports note a steady upward trend from 69 million cubic meters of industrial roundwood sourced from TOF in 2011 to 91.5 million cubic meters in 2023, accounting for approximately 85 percent of India's industrial wood demand (Forest Survey of India, 2023; Sapra, 2025).

Data on TOF are generally scarce, but what surveys are available indicate a general expansion of TOF across the Asia-Pacific region. One such study revealed a steady increase in tree cover on agricultural land in the Asia-Pacific region from 15 percent in 2000 to 16.3 percent in 2010 (Zomer et al., 2019). Paradoxically, some economies are witnessing an increase in tree cover at the same time they are experiencing a loss of strictly-defined forest cover.

### **Trend 3 Shifts in Forest Ownership and Management Authority**

The vast majority of forests in Asia and the Pacific are publicly owned and administered by public entities, including government agencies and parastatal companies. Across the entire region, 72 percent of forests are held in public ownership, while 28 percent are privately owned, but there are large differences among the subregions (Table 2). In the *Western and Central Asia* subregion, almost all forests (98 percent) are publicly owned, while the percentage is 85 percent in the *South and Southeast Asia* subregion, and only 65 percent in the *East Asia* subregion. Publicly owned forests in Oceania comprise only 53 percent of the total forest area (mostly located in Australia and New Zealand). Almost all forests in Papua New Guinea, Vanuatu, and most Pacific island nations are privately held under customary ownership by local communities and indigenous groups.

**Table 2 Forest Ownership, by Region and Subregion, 2020**

Region/subregion	Area privately owned (1 000 ha)	% of total forest area	Area publicly owned (1 000 ha)	% of total forest area	Area of other/unknown ownership (1 000 ha)	% of total forest area
East Asia	95 657	35	176 507	65	0	0
South and Southeast Asia	44 228	15	251 952	85	222	n.s.
Western and Central Asia	834	2	54 530	98	0	0
<b>Asia</b>	<b>140 719</b>	<b>23</b>	<b>482 989</b>	<b>77</b>	<b>222</b>	<b>n.s.</b>
<b>Oceania</b>	<b>85 597</b>	<b>47</b>	<b>97 057</b>	<b>53</b>	<b>648</b>	<b>n.s.</b>
<b>South America</b>	<b>294 980</b>	<b>34</b>	<b>503 654</b>	<b>58</b>	<b>71 791</b>	<b>8</b>
<b>WORLD</b>	<b>1 062 533</b>	<b>24</b>	<b>3 119 173</b>	<b>71</b>	<b>188 204</b>	<b>4</b>

Note: n.s.= not significant.

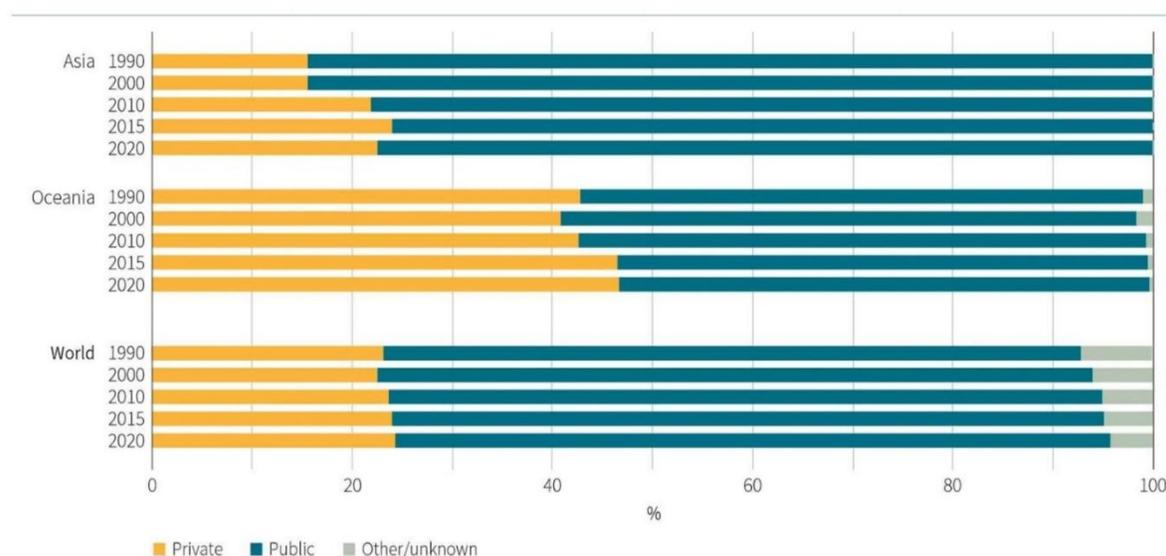
Source: FRA 2025.

An important trend since 1990 has been the shift in several economies of the region toward greater private ownership of forests. In Asia (excluding Oceania), private ownership of forests has increased from 16 percent in 1990 to 23 percent in 2020 – reflecting major changes in China, where the area of private forest more than doubled over the period<sup>3</sup>. Long-established recognition of customary ownership of forests in many economies in the Pacific, coupled with strong recognition of private property rights in Australia and New Zealand, contribute to Oceania having the highest percentage of forest area in private ownership (47 percent) of any region of the world.

Of the privately owned forest in the Asia subregions, 58 percent is owned by individuals, 19 percent by private institutions, and 23 percent is owned by Indigenous Peoples and local communities (Figure 6). In Oceania, where traditional forest ownership by Indigenous Peoples and local communities is well-established, the percentage is much higher, rising to 100 percent in five economies and territories (American Samoa, Cook Islands, Marshall Islands, Vanuatu, Wallis and Futuna Islands), 99.9 percent in Papua New Guinea, and 99.7 percent in Niue.

<sup>3</sup> In the Chinese context, “private ownership” refers to the allocation of forestland to individual households for management, use, and benefit, while the ownership of the land itself remains with the state or collectives.

**Figure 6 Proportion of Forest Area, by Ownership Type and Region, and Globally, 1990-2020**

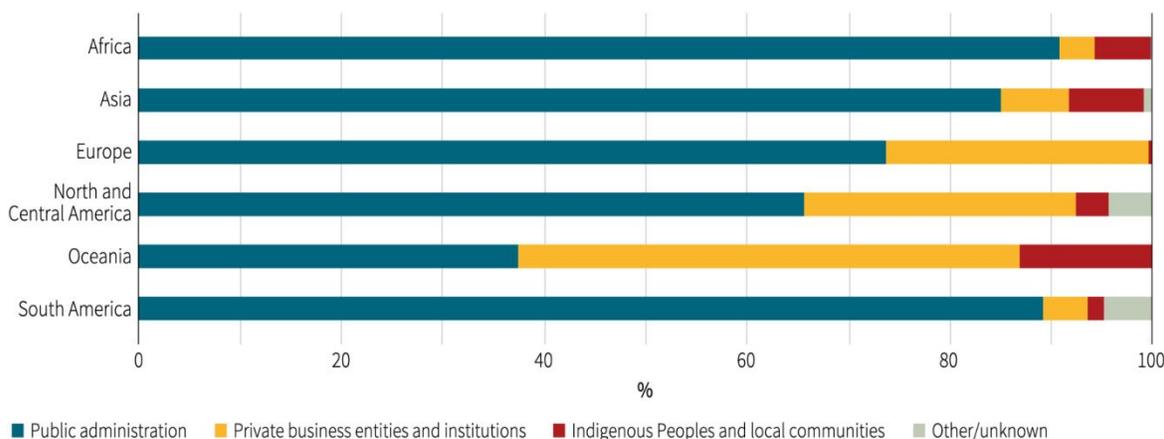


Source: FRA 2025.

Within publicly owned forests, management control can be retained by government agencies or parastatal companies, or allocated to private companies, non-governmental organizations, Indigenous Peoples and local communities, or individuals. Management rights can be extended under leases, concession agreements, or other tenure instruments for periods ranging from only a few years to many decades.

In the Asia subregions, public agencies strongly retain the rights and authorities to manage publicly owned forest, at 85 percent, but there is a growing trend toward delegating management to local individuals and communities. In Oceania – where the majority of publicly owned forests are located in Australia and New Zealand – management rights over fully 50 percent of the publicly owned forests have been conveyed to private companies and institutions through leases and concessions; with another 13 percent delegated to Indigenous Peoples and local communities. Management rights over 37 percent of the publicly owned forest in Oceania have been retained by public agencies (Figure 7).

**Figure 7 Proportion of Publicly Owned Forest Area, by Holder of Management Rights and Region, 2020**



Source: FRA 2025.

There has been a steady trend across most of Asia and the Pacific over the past 30 years to grant increased management authorities to individuals and local communities. In some economies such as China and Vietnam, this has taken the form of forest land allocation to individual households. Other economies (e.g., Pacific island nations, Indonesia, Philippines) have strengthened recognition of traditional ownership and/or resource tenure over forests. Still others have devolved management authorities over larger areas of publicly owned forests to Indigenous Peoples and local communities.

#### **Box 4 Vietnamese “Red Books” Help Propel the Forestry Sector**

In the late 1980s, Vietnam launched the Doi Moi economic reform agenda, aimed at shifting the economy from central planning to a “socialist-oriented market economy.” One of the most ambitious and transformative initiatives under Doi Moi was the transfer of land-use rights from the state to individual households. Under the allocation program, Land Use Right Certificates (LURCs) were granted to households covering 14.3 million hectares of land (fully 46 percent of the economy’s land area). Issuance of the LURCs (whose red covers led to the certificates being referred to as “Red Books”) has had a profound impact on the lives of 24 million people living in the economy’s uplands (Dinh et al., 2023).

While official land ownership still resides with the state, the Red Books grant rural households secure 50-year use rights that can be exchanged, leased, inherited, sold, or mortgaged. In mountainous areas, LURCs set conditions for land-use practices and encourage reforestation of degraded lands. Across the economy, land allocation has been complemented by high-profile government policies aimed at increasing forest cover, such

as the “Five-Million Hectare Reforestation Program.”

Secure land tenure and government support – coupled with deregulation of timber harvesting, transport, processing, and marketing – has spurred a tremendous boom in tree planting and timber production, supplying much of the raw material fueling the economy’s US\$15 billion annual forest products export sector. Vietnam’s forest cover has risen from 9.4 million hectares in 1990 to 14.8 million hectares in 2025 – an astonishing 57 percent increase. More than 3 million hectares of this increase are planted forests, mostly raised by smallholder farmers holding secure land tenure guaranteed by Red Books.

Most of the trees planted are fast-growing acacias and eucalypts, which are typically harvested within five or six years of planting. Currently, 1.4 million smallholders manage about two-thirds of the economy’s planted forests, yielding an annual harvest of around 32 million cubic meters of timber (Steven Midgley, personal communication, December, 2025).

The deregulated environment makes it easy for farmers to harvest and sell their timber, and for small processing companies to establish. At least 5,000 wood-processing enterprises have sprouted up across the economy – the vast majority of which are small-scale – producing veneer, wood-based panels, sawnwood, furniture, wood pellets and chips, and a range of other products. Some officials estimate there are at least another 11,000 household-level wood processors operating in the economy (Fujisaka et al., 2023).

Vietnam exported wooden furniture worth US\$13.3 billion in 2024 (down from its peak of US\$15.1 billion in 2022) and was the leading exporter of wood chips and pellets in the region. The economy’s wood chip exports exceeded US\$2.7 billion in 2024 (two-thirds of the region’s total), while shipments of wood pellets topped US\$800 million (more than 70 percent of the region’s total). The rapid build-up of the smallholder plantation resource in Vietnam has also allowed the economy to dramatically slash its wood imports from high volumes of the 1990s to near zero currently (FAOSTAT, 2026).

Vietnam’s land allocation program has not been without controversy as the it has sometimes been faulted for inequitable distribution of land and preferential allocation to elites, allowing farmers to use allocated land for purposes other than those prescribed in LURCs, and fostering the proliferation of mono-culture plantations of exotic tree species (Fujisaka et al., 2023). These criticisms aside, there is little doubt that much of Vietnam’s success in the forestry sector over the past three decades can be attributed to its land allocation program and the tenure security assured by its Red Books.

Notably, some of the biggest increases in forest cover throughout the region have occurred in economies where management has been devolved to smallholders, local communities, and Indigenous Peoples. These devolution practices – combined with strengthening tenure over forest resources and expanding access to markets – have spurred a groundswell of tree planting and management in several economies, resulting in more diversified livelihoods and benefits for local people and often empowering women. Numerous studies have indicated that such decentralization and devolution of forest management to local people also leads to a reduction of illegal activities in the forest, such as illegal logging, mining, and poaching (Dasgupta, 2017).

Nepal demonstrates the classic example of forest area gain after landmark legislation in 1993 allowed for allocation of management rights to communities (NASA Earth Observatory, 2023). In more recent years, China’s large forest recovery has been driven by devolved management and massive afforestation programs. Similarly, Vietnam’s expansion of plantations has been supported by granting households and individuals legal authority over land-use management.

#### **Box 5 Community-based Forestry Advancing in Indonesia**

The Government of Indonesia established the Perhutanan Sosial (Social Forestry) program in 2014, with aims of improving the welfare of rural, forest-dependent people and enhancing the management and protection of forests. The program grants local people long-term legal access to forests under five management schemes: 1) community forests; 2) village forests; 3) community plantation forests; 4) partnerships; and 5) customary forests.

Ambitiously, the program initially set a target of allocating 12.7 million hectares of forests to local people by the end of 2019. However, implementation delays compelled the government to adjust the date for achieving the target level of allocation to 2030.

By mid-2018, just 1.75 million hectares had been allocated to 395,000 households. Progress greatly accelerated since that time, however. By 2025, nearly 8.4 million hectares had been allocated to more than 1.4 million families (Antara News, 2025a). With full achievement of the program’s target, more than 10 percent of Indonesia’s forest lands will have been allocated to local people under long-term legal permits.

A key element of the program focuses on establishing forest-based income generating activities that are both ecologically sustainable and financially viable, including agroforestry, non-timber forest product value addition, and ecotourism. The program provides support to local communities through Social Forestry Business Groups, which now has number more than 15,700 across the economy and produce more than 3,000 commodities and products (Antara News, 2025b).

The Center for People and Forests (RECOFTC) has noted the significant pace in the adoption of community forestry and social forestry throughout ASEAN economies in the past ten years. With support and coordination from the ASEAN Working Group on Social Forestry, formed in 2006, six ASEAN economies have adopted new or revised community forestry laws over the last decade (RECOFTC, 2020a). Across ASEAN, targets have been set for 30 million hectares of forests to be managed by local communities by 2030, which would reflect a nearly five-fold increase from 2010 levels (RECOFTC, 2020b). As of mid-2019, 46 percent of this target area had been successfully transferred to community management, demonstrating significant progress towards the 2030 goal (ASEAN, 2022).

#### **Trend 4 Climate Change: A Dominant Influence**

Climate change has been a central focus of forest management over the last two decades, with major attention focused on REDD+, forest-based carbon markets and offsets, and roles of trees and forests in adaptation to climate change. As global temperatures rise and moisture regimes change, forests are increasingly vulnerable to environmental stresses, leading to greater vulnerability to fires, pests and diseases, and dieback. At the same time, forests have become widely recognized as critical for dialing back climate change through carbon sequestration and as key elements of adaptation strategies. The adoption of the Paris Agreement in December 2015 marked a shift from abstract environmental goals toward the integration of forestry into Nationally Determined Contributions (NDCs).

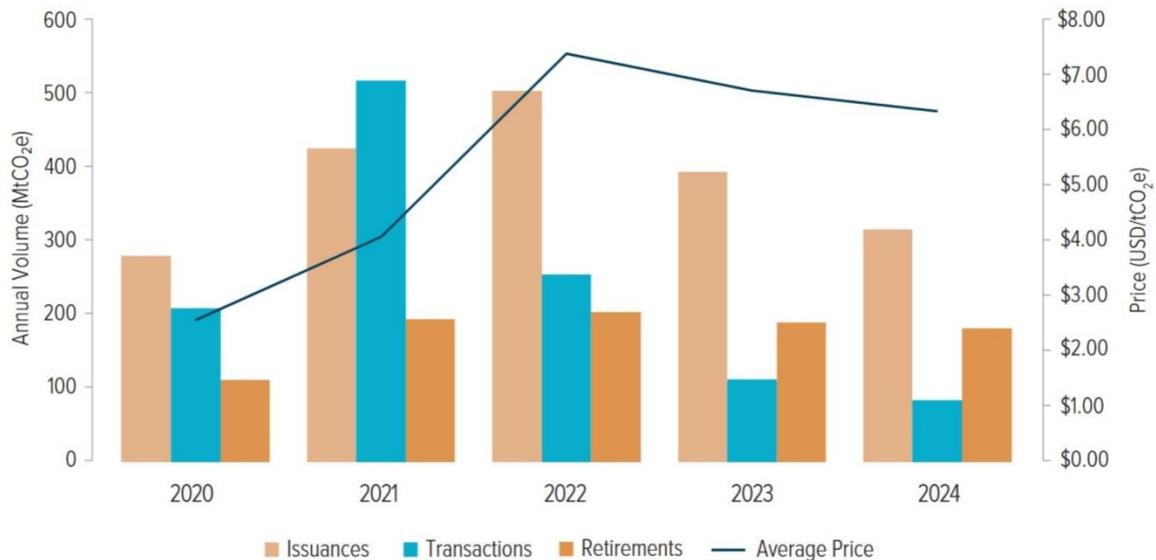
Nonetheless, the transition from these initial promises to a meaningful scale of implementation has been tedious and much slower than hoped. Progress in establishing national carbon markets, for example, has been fitful at best. Several economies in the region, including the Philippines, Thailand, Vietnam, and Indonesia, have begun developing policies to support forest-based carbon markets, but advancement has been slow. Major challenges remain in moving beyond policy to establish functional, national-level mechanisms that can accurately measure, report, and trade forest-based carbon credits.

While comprehensive forest-based climate mechanisms have struggled in development, most smaller project-scale initiatives that have been pioneered – largely through voluntary markets – have also fallen short of expectations, largely due to weak pricing for forest carbon and limited scale of impact. Trading of forest-based carbon credits has recently been sullied by revelations of inflated claims of emissions reductions, lack of

additionality, inadequate permanence of carbon sequestration, and negative impacts on local communities (Carbon Market Watch, 2023; West et al., 2023).

Even while forest-based carbon trading has struggled to regain reputational integrity, the global demand for high-quality carbon removal credits is rising. Nonetheless, the price for many REDD+ credits has remained stagnant (Figure 8), staying well below US\$10 per ton over the past two years in voluntary markets (UNEP, 2025). While these low prices might help discourage deforestation in some areas, they are often not enough to compete with more profitable activities, such as clearing land to grow agricultural commodities like palm oil, maize, soy bean and cassava. Analysis by the United Nations Environment Programme (UNEP) suggests that a price between US\$30 and US\$50 per ton for nature-based credits is necessary to incentivize the widespread, large-scale changes required to meet global climate goals (Forest Trends, 2025).

**Figure 8 Voluntary Carbon Market Issuances, Transactions and Average Price, 2020-2024**



Source: Ecosystem Marketplace State of the Voluntary Carbon Market 2025.

With five years to go before the critical Paris Agreement benchmark year of 2030, the first Global Stocktake and the outcomes of COP28 have revealed a persistent gap between current mitigation trajectories and the 1.5°C goal of the Paris Agreement.

Although financial mechanisms rewarding forest-based climate action have struggled to develop, the intense focus on forests and climate change has delivered clear benefits for forestry overall. These include rapid advances in forest monitoring designed to underpin REDD+, greater appreciation of the carbon sequestration values of primary forests and mangroves, improved knowledge of forest fire regimes and management, better

understanding of the responses of trees and forests to climate change, broader recognition of forestry's potential in supporting adaptation, and improved transparency and forest governance.

Meanwhile, efforts to develop more effective incentive systems also continue, especially at national-level scale. One example is the proposed Tropical Forest Forever Facility, launched at COP30, which aims to reward economies for continued conservation or expansion of tropical forests through annual payments (UNFCCC, 2025).

### **Trend 5 Growing Concerns Over Biodiversity**

Unfortunately, Asia-Pacific's broad success in expanding net forest area does not necessarily reflect a parallel improvement in the overall state of forest health in the region. The region's increase in net forest area is almost entirely due to the expansion of planted forests. While such forests help reduce harvesting pressure on natural forests and also provide ecosystem services, they do not contribute in the same way to biodiversity conservation and ecosystem resilience as do naturally regenerating forests. The region's natural forests, and especially its primary forests, are crucial for maintaining biodiversity. Thus, the loss or degradation of naturally regenerating forests is of particular concern.

Forest health and vitality have declined in all regions of the world, but Asia has shown the steepest and largest decline of terrestrial biodiversity intactness over the past century (WWF, 2024).

Since 1990, the area of biologically-rich, naturally regenerating forest in Asia and the Pacific has declined by 16.0 million hectares. During that same period, 13.8 million hectares of the most biologically rich primary forests were lost or degraded, mainly as a result of agricultural expansion, unsustainable logging, infrastructure development, and mining operations. The losses were the greatest in the 1990s and early 2000s, but conversion of naturally regenerating forests continued at disturbing rates in recent years in the *South and Southeast Asia* subregion, where an average of 698,000 hectares of naturally regenerating forests were lost each year between 2015 and 2025.

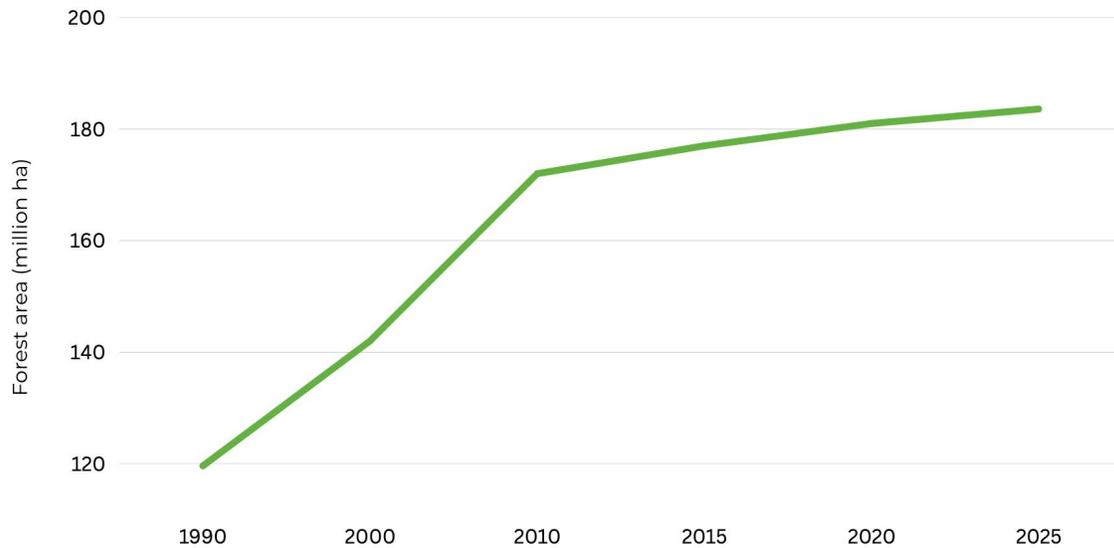
While 46 economies in Asia-Pacific have reported either no change or an increase in naturally regenerating forest since 1990, 27 economies (more than one-third) have experienced a reduction in the area of naturally regenerating forests – and the losses are significant where they are occurring.

Asia and the Pacific has the lowest percentage of primary forest relative to total forest area of all the regions of the world. Just 14.8 percent of the region's forests are registered

as largely unspoilt primary forests, compared with the global average of 33 percent. The region holds only 10.3 percent of the world’s primary forests.

Working to stem the loss of naturally regenerating forests and their associated rich biodiversity, economies of the Asia-Pacific region have aggressively expanded the number and area of national parks and other terrestrial protected areas (Figure 9).

**Figure 9 Forest Area in Legally Protected Areas in Asia-Pacific Region, 1990-2025**



Source: FRA 2025.

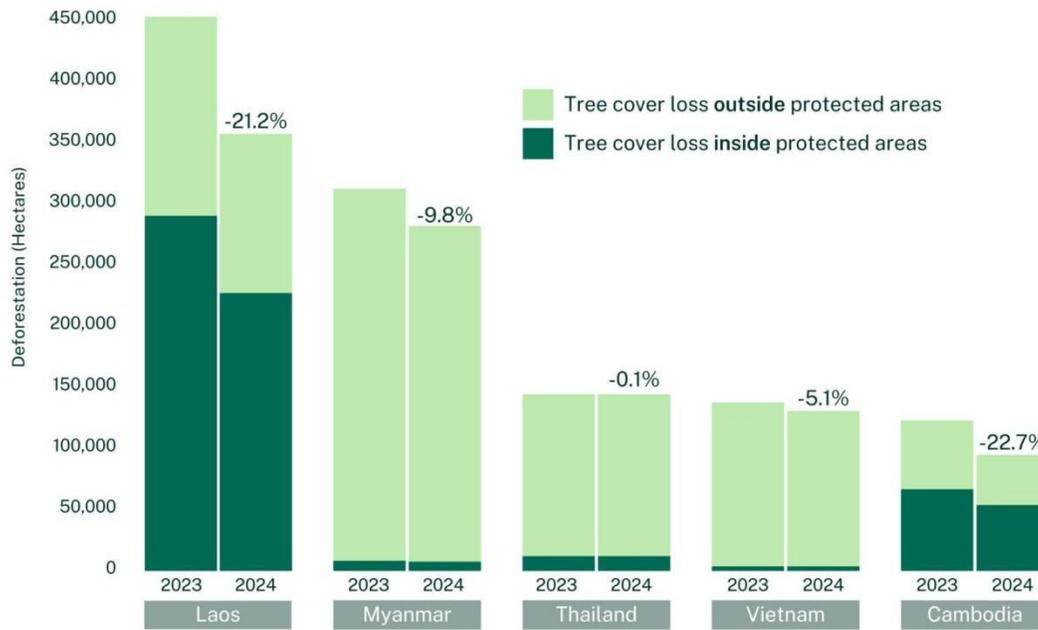
Since 1990, the extent of legally designated protected areas in the region has risen by 53.5 percent. Indeed, Asia and the Pacific, together with Africa, now have the highest percentage of land under protected status of any regions in the world, at 26 percent. However, there are nagging questions about how effectively these areas are managed and protected. The Global Forest Watch, for example, while noting a reduction in deforestation from 2023 to 2024, revealed data indicating that more than 30 percent of tree cover loss across the Mekong economies in 2024 occurred inside protected areas (Mongabay, 2025a). Protected areas in Cambodia and Laos were particularly affected.

**Box 6 Forest Cover Loss Continues Despite Established Protected Areas in Mekong Economies**

The formal extent of protected areas in the region continues to expand, yet evidence suggests that legal designation alone is insufficient to prevent forest loss. An analysis of satellite data published by GFW and the University of Maryland’s Discovery Laboratory on the five Mekong economies of Cambodia, Laos, Myanmar, Thailand, and Vietnam

revealed that more than 30 percent of tree cover loss recorded in 2024 occurred within protected areas (Figure 10). Collectively, these five economies lost almost 1 million hectares of tree cover in 2024, including nearly 220,000 hectares of primary forest.

**Figure 10 Tree Cover Losses Across the Mekong Region, 2024**



Source: Global Forest Watch (GFW) and Global Land Analysis and Discovery (GLAD) Laboratory at the University of Maryland, analyzed by Mongabay.

Cambodia and Laos experienced some of the highest levels of forest cover loss within protected areas, driven largely by logging, agricultural plantations, and hydropower development. In Cambodia alone, GFW data show that more than 93,000 hectares of tree cover was lost in 2025, with approximately 56 percent of this loss occurring inside areas designated for protection (Mongabay, 2025a). Very little of these losses can be attributed to forest fires – GFW estimates that fire is responsible for just 0.97 percent of tree cover loss in Cambodia between 2001 and 2024 – which suggests this trend is not easily attributable to short-term or temporary changes in tree cover.

Similarly, 64 percent of forest cover loss in Laos occurred in the economy’s protected areas. The expansion of agricultural and mining concessions has led to encroachment on national biodiversity protection forests such as Dong Hua Sao and Xe Pian. The government has reportedly authorized some 110,000 hectares of national conservation and protected forest areas for use as “production forests” by foreign investors (Mekong Eye, 2023).

While tree cover loss is not necessarily indicative of long-term changes (see Box 2), the

clearing of primary forests for agricultural use represents a fundamental loss of biodiversity and ecosystem services. The concentration of this loss within protected zones highlights the fragility of existing conservation frameworks and underscores a persistent gap between protected area coverage on paper and effective outcomes on the ground.

### **Trend 6 Forest Restoration**

Given the large extent of previously degraded lands in the region and international commitments to address climate change and biodiversity loss, forest and landscape restoration has emerged as a regional priority. FAO highlights that there are more than 500 million hectares of degraded land in the region that could potentially be restored (FAO, 2026b; Minnemeyer et al., 2011).

Restoration efforts are currently being given added impetus as a result of the designation of the UN Decade on Ecosystem Restoration (2021-2030), which aims to prevent, halt, and reverse ecosystem degradation worldwide (UN Decade on Ecosystem Restoration, 2025). Twenty Asia-Pacific economies have committed to restoring more than 100 million hectares by 2030 under the Bonn Challenge, Kunming-Montreal Global Biodiversity Framework, New York Declaration of Forests, Glasgow Leaders Declaration on Forests and Land Use, and the Rio Conventions on Climate Change, Combating Desertification, and Biodiversity.

Numerous international, regional, and national organizations are strongly supporting restoration efforts in Asia and the Pacific, including expansive landscape approaches aimed at ensuring sustainable restoration and management of forests while reconciling competing land-use demands.

Broader landscape restoration also encompasses sound agroforestry development, an important land-use practice in most parts of Asia and the Pacific that allows for sustainable agricultural production while maintaining soil fertility and other important ecosystem functions. Agroforestry has a long history of practice throughout much of the region, encompassing diverse systems like *taungya* (growing agricultural crops together with tree plantation establishment), *swidden* agriculture (shifting cultivation), alley cropping, improved fallows, silvopastoral systems, farm forestry, shaded perennial cropping, and home gardens (Nair et al., 2021). Agroforestry systems have taken on new importance in the region with growing appreciation of their roles and potential in ecosystem restoration (Dissanayaka et al., 2025), and climate change mitigation and adaptation (Abebaw et al., 2025).

### **Box 7 Combating Desertification Through Forest and Landscape Restoration**

In Central Asia, where the encroaching threat of desertification is compounded by the drying of the Aral Sea and intensifying climate volatility, the focus of restoration has shifted toward trans-boundary, landscape-scale interventions. The CACILM-2 (Central Asian Countries Initiative for Land Management) framework highlights a transition from traditional sand-dune stabilization toward integrated “green belts” that incorporate drought-resistant halophytes and native shrubs. Uzbekistan and Kazakhstan, for example, have pioneered large-scale afforestation on the exposed Aral Seabed to secure sand dunes (UNDP, 2025).

Recognizing the need for community-led natural resource management, FAO is promoting the adoption of “agro-silvo-pastoral” systems, where forest restoration is coupled with sustainable grazing practices and the cultivation of non-timber forest products such as pistachios, walnuts and almonds. In Kyrgyzstan and Uzbekistan, where rural families often depend on small-scale animal husbandry, the integration of NTFPs provide diversified income streams. Furthermore, these integrated landscapes address the “feed gap” – a major driver of overgrazing – by using nitrogen-fixing trees and shrubs to provide protein-rich fodder during harsh winters when open pastures are inaccessible. By transitioning from open-access grazing to managed silvo-pastoral plots, communities can secure higher yields of meat and milk while simultaneously regenerating the “green infrastructure” that protects their soils from wind erosion and climate-induced desertification.

In support of regional collaboration and high-level policy coordination in combating desertification, APFNet launched the Greater Central Asia Forestry Cooperation Mechanism in 2014, which includes China, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, and Uzbekistan. Through biennial ministerial meetings, training programs on desertification control, field demonstration projects, and the publication of regional forestry development reports, the mechanism works to align policy commitments with on-ground implementation, promoting integrated desertification management and livelihood improvement across the region.

China has conducted the region’s most ambitious and long-running efforts to combat desertification in the region. Launched in 1978, and scheduled to be completed only in 2050, the Three North Shelterbelt Program has planted billions of trees across tens of millions of hectares of desertification area in the northern, northeastern, and northwestern parts of the economy. The program has been widely credited with slowing desert expansion, reducing dust storms, boosting agricultural production, and improving

livelihoods for millions of people living in the affected areas (Li et al., 2012).

Afforestation of desertification lands is not without controversy, however, especially in areas with very limited annual precipitation. Poorly designed interventions risk undermining fragile dryland ecosystems and exacerbating water scarcity. Large-scale planting of trees in some arid regions has drawn down underground aquifers at unsustainable rates and intensified evapotranspiration, leading to reduced soil moisture and surface runoff (Qi et al., 2023). Planting has often been carried out with only a limited number of species established for rapid dune stabilization or carbon sequestration – resulting in monoculture plantations which frequently suffer high mortality rates, deliver limited long-term ecosystem services, and crowd out traditional land uses such as pastoralism. Recent studies suggest that such large-scale tree planting efforts can even shift precipitation patterns across wide geographic areas, leaving some areas with less available rainfall than prior to afforestation (An et al., 2025).

There is growing consensus that afforestation in desert contexts should not be implemented as blanket tree planting, but instead as climate-adapted landscape restoration that prioritizes native species, low-density woody cover, and the regeneration of natural vegetation mosaics. The use of traditional restoration techniques, such as zai pits<sup>4</sup>, are a good example of contextually-conscious interventions that can restore soil fertility and enable crop and tree growth in arid conditions (Nuraddeen Danjuma and Mohammed, 2015). When embedded within participatory land-use planning and supported by robust hydrological assessments, such approaches can mitigate desertification while avoiding the ecological and social trade-offs associated with inappropriate afforestation.

In the past, international organizations, multilateral development banks, and bilateral agencies provided large amounts of financial support for forest restoration in several economies of the region, but the relative importance of such external funding has declined in recent years. Promisingly, many national governments in Asia and the Pacific have stepped up budget allocations from their own national treasuries for forest restoration. Private sector investment also plays a significant role in many economies.

With many diverse entities contributing to forest restoration efforts in the region, coordination has become increasingly valuable to avoid duplication and accelerate learning from experience. Recognizing this need, FAO and APFNet facilitated the formulation of the *Regional Strategy and Action Plan for Forest and Landscape*

<sup>4</sup> A traditional West African technique using small, manually dug pits to capture rainwater and concentrate nutrients, enabling farming and tree growth in degraded drylands.

*Restoration in Asia-Pacific* (FAO and APFNet, 2018), which was endorsed by the 34 members of the Asia-Pacific Forestry Commission at its 27th session in 2017 (FAO, 2017). FAO continues to give high priority to coordinating restoration efforts in the region through RESULT Asia-Pacific, a framework under which 35 partner organizations harmonize support for forest and landscape restoration across the region (FAO, 2026).

Important trends in forest restoration approaches in Asia and the Pacific include greater emphasis on planting of native tree species, shifts from single-species reforestation to multi-species planting, and greater focus on assisted natural regeneration of forests. Recognizing the ecological fragility of many of its vast single-species forest plantings of the past, China has significantly stepped up efforts to enhance the biodiversity of its planted forests through multi-species selections for new plantations, and enrichment planting and promotion of natural recruitment of native species in the understory of existing plantations (Wang et al., 2025).

A major challenge of forest restoration in the Asia-Pacific region, and around the world, is in scaling up restoration efforts to address the extensive areas of degraded lands. Numerous promising restoration practices have been pioneered, but many have been relatively small-scale efforts that are too costly, or technically and socially inappropriate, for large-scale implementation. Highlighting this challenge, the UN Decade on Ecosystem Restoration established the World Restoration Flagship Program to recognize some of the world's best large-scale restoration initiatives. Asia-Pacific efforts recognized under the UN flagship program include projects to regenerate 20,000 hectares of burned forests in the Uljin area of Korea, rehabilitate 10 million hectares in China under the Shan-Shui Initiative, double the area of mangroves in Sri Lanka, and restore the Terai Arc Landscape in Nepal.<sup>5</sup>

### **Trend 7 Demographic Shifts Resulting in Contrasting Influences on Forests**

Sixty percent of the world's population lives in Asia and the Pacific, which unavoidably places tremendous demands on the region's forests and natural resources. Despite a slowing growth rate, the overall population of Asia-Pacific continues to expand, with the regional population expected to grow from the current level of 4.8 billion people to around 5.0 billion in 2030. Most of the population growth is occurring in the *South and Southeast Asia* subregion and in some Pacific island nations. In sharp contrast, population levels in East Asia (especially China, Japan, and Korea) have leveled off or are in decline.

<sup>5</sup> Projects as seen on the Ecosystem Restoration Project Hub of the UN Decade of Ecosystem Restoration.

Societies in several economies in the region are aging rapidly. Most notably, Japan is considered to be “super-aged” with more than 20 percent of the population over 65 years of age – the oldest in the world. Thailand, Singapore, Korea, and China also have rapidly aging societies. This aging of societies will increasingly affect forest management and consumption of forest products. In Japan, for example, there is already a distinct lack of labor available to work in forest management and harvesting as older forest workers retire and move from the countryside, and fewer young people pursue rural work opportunities (Japan Times, 2022; International Forest Industries, 2017). As households decline in number and size, there is also a tendency to downsize living quarters, with corresponding decline in the demand for construction materials, furniture, and finishings.

### **Box 8 Improving Human Wellbeing Through Urban Forestry and Green Spaces**

No longer seen as just a luxury, urban forests and green spaces are now viewed as essential infrastructure for modern living. Public awareness of their amenity value is growing, particularly regarding how trees improve air quality by filtering pollutants and absorbing carbon. As cities face rising temperatures and intensifying climate variability, urban forests also provide a vital defense against the “urban heat island” effect – lowering local temperatures by as much as 2-4°C through evapotranspiration and shade.

Beyond these environmental services, the value of green spaces has major benefits for neighborhood beautification and recreational spaces. There is a strong regional focus on providing outdoor spaces that support public health and mental well-being. This trend is clearly visible in the “National Forest City” programs in China, where over 200 cities have committed to integrating large-scale forests into their urban plans (Xinhua, 2018).

Similarly, Japan’s protection of “satoyama” ( 里山 ) landscapes – human-influenced landscapes where sustainable coexistence between villages, fields, and woodlands blends together (Japan Nature Conservation Bureau, 2009) – and the Republic of Korea’s investment in “healing forests” demonstrate how national policies can successfully designate forests for public health (Park et al., 2021).

As the region continues to urbanize, the integration of forests into cityscapes will likely become the standard for sustainable development. However, the management of these spaces presents institutional challenges. While city administrators typically hold jurisdiction over urban land use, their expertise often prioritizes civil engineering and landscape aesthetics.

Clear benefits are derived when there is close collaboration between urban administrators and traditional forestry departments and forestry professionals to assist in the planning

and development stages of urban forests. Partnerships that integrate advanced silvicultural techniques, pest management, and biodiversity conservation strategies will help ensure long-term resilience and maximize the ecological functionality of these spaces.

Out-migration of workers is another trend that is having profound implications for forests and forestry, especially in parts of India, Nepal, Bangladesh, Sri Lanka, Indonesia, the Philippines, and Thailand, where out-migration is particularly common. Multiple factors related to out-migration have influence on forests in the communities left behind. To the extent workers migrate from rural communities located in or near forests, out-migration reduces the pressure on forests for subsistence livelihoods and harvesting of forest raw materials for cash income (Bista et al., 2023). The resulting local labor contractions also tend to force remaining community residents to shift from labor-intensive subsistence farming (often destructive to forests) to growing of perennial tree crops that require fewer labor inputs. Thus, it is common to witness the reversion of abandoned fields to forest (either planted or naturally regenerated) in areas of out-migration. Additionally, the remittances from overseas workers often provide family members remaining in the home the financial flexibility to abandon difficult farming operations in favor of simply purchasing needed food, again paving the way for abandoned agricultural lands to revert to forest (Gill, 2019). Throughout the Asia-Pacific region, many rural communities that have large numbers of overseas workers have seen a dramatic increase in tree and forest cover. Households receiving remittances also tend to reduce their traditional use of firewood as cash infusions make it easier to shift to more convenient gas and electricity for cooking perennials and cereals (Zhunusova et al., 2022).

Urbanization is another demographic having major influences on forests and forestry in the region. Over half of Asia-Pacific's population now lives in urban areas and the percentage is steadily growing (UNDP, 2024). Increasing urbanization is generally associated with positive forest outcomes – primarily as a result of decreased direct reliance on subsistence agriculture and the availability of alternative economic opportunities. However, urbanization of populations also brings with it new sets of consumer needs and desires, diversifying the nature of the demands placed upon forests.

Urban populations tend to demand most of the same things from forests that rural people do – they continue to require the foundational outputs that rural communities rely on, such as biomaterials for medicine and fabrics, timber for construction, and local climate regulation – but they also overlay these with additional expectations. Forests are no longer viewed solely as sites of production or livelihoods, they are increasingly valued as essential infrastructure for public health, recreation, and mental well-being. Such a shift

has catalyzed a surge in demand for ecotourism, aesthetics, recreational spaces, and leisure destinations. As a result, forest managers in the region are now expected to balance industrial outputs from forests with the intangible values of biodiversity and leisure.

### **Trend 8 Growing Prosperity Driving Demand for Forest Products and Shifts in Production**

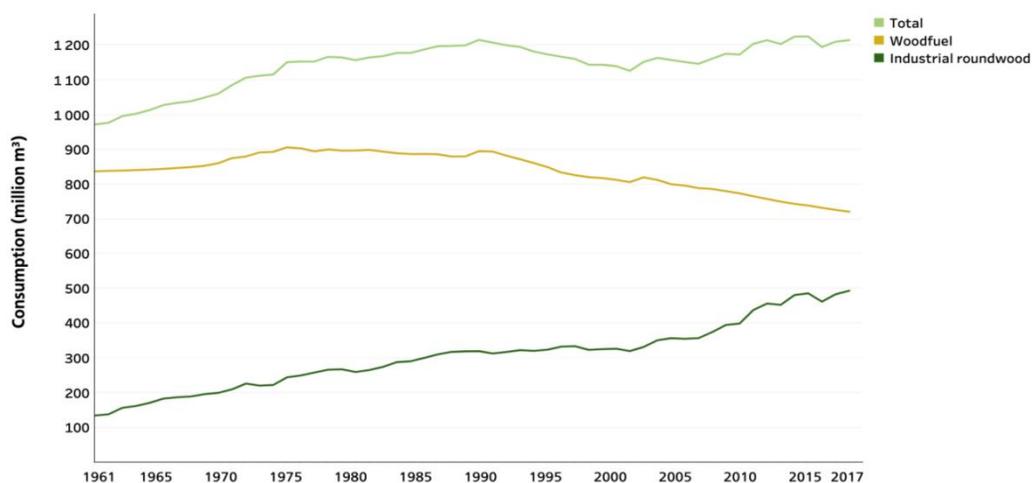
The huge and still growing populations in Asia and the Pacific inherently place massive pressure on the region’s forests to provide for the needs of the people. But, more significantly, the region’s increasing prosperity is fueling a surge in demand for wood, tissue paper, packaging, furniture, and all manner of forest products.

Estimates suggest that almost 90 percent of new entrants to the global middle class will be in Asia-Pacific, consisting primarily of Indian and Chinese consumers (OECD, 2021). The region’s middle class will more than double by 2030 from 2015 levels, eventually accounting for over half of all global consumer spending (Brookings, 2017).

This rising prosperity across the region is having a profound impact on regional and global forestry trends, creating both new market opportunities and significant environmental pressures. As Asia-Pacific is a major producer, consumer, and exporter of wood products, some of the shifts in production and forest value chains are already visible in markets today.

The rapid ascent of the middle class directly correlates with an increased demand for wood-based products, including housing construction materials, furniture, and packaging for goods. As incomes rise, per capita consumption of industrial wood dramatically increases, moving beyond basic fuelwood needs to higher-value goods (Figure 11).

**Figure 11 Trends in Roundwood Consumption, Asia-Pacific Region, 1961-2017**

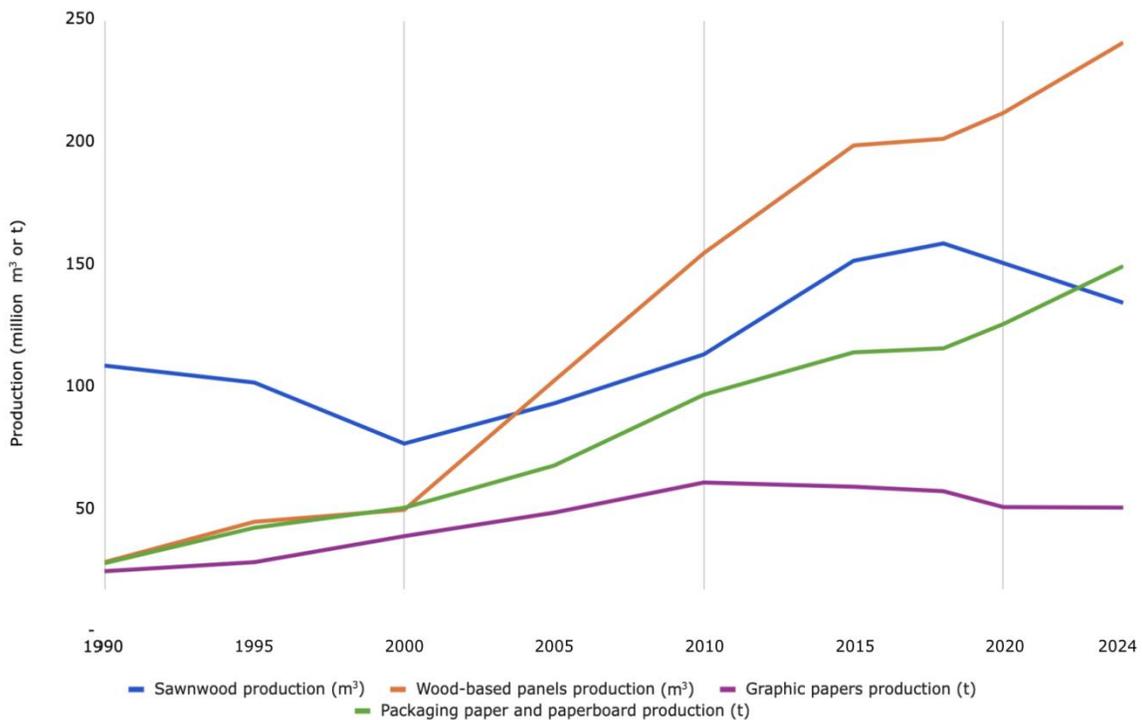


Source: FAO, 2019.

The construction industry leads in demand for industrial roundwood and sawnwood, used in housing, infrastructure, and commercial development (Figure 12). Wood-based panels have seen explosive growth, with an eightfold increase in production in Asia-Pacific since 1990<sup>6</sup>. These trends are most evident in large, fast-growing economies, such as China and India, where projections have indicated a multi-fold increase in wood and wood product demand.

Increased purchasing power also pushes interest in higher-value consumer goods like hardwood furniture, kitchen cabinets, and flooring. China has emerged as the world’s largest manufacturer of wooden furniture, accounting for 40 percent of global production. As much as 70-80 percent of China’s wooden furniture production is sold domestically to furnish the homes of the economy’s burgeoning middle class (USDA Foreign Agricultural Service, 2023). Beyond domestic consumption, however, China is also the world’s largest exporter of wooden furniture, shipping US\$24 billion worth of products in 2024, roughly double that of Vietnam, which is the world’s second largest exporter (ITTO, 2025).

**Figure 12 Trends in Production of Forest Products in Asia-Pacific**



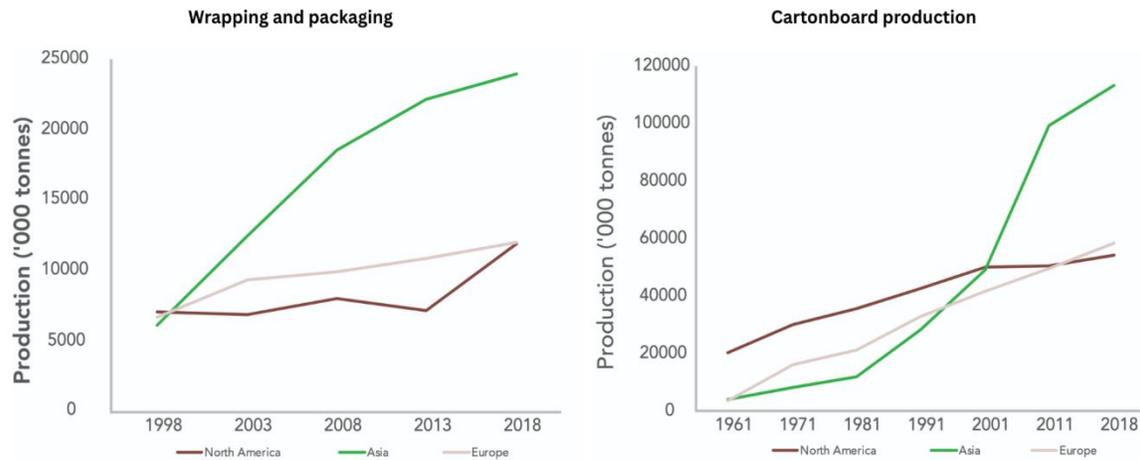
Source: Data from FAOSTAT.

<sup>6</sup> Data derived from FAOSTAT.

Sustainability movements favoring “green” products, coupled with advanced wood processing technologies and innovative new uses of wood products, such as the processing of small-diameter logs, laminated beams, and mass timber products, have also contributed to increased timber consumption and demand. The recent 2025 Osaka World Fair prompted the construction of the largest wooden building in the world, built to highlight the renewable and recyclable qualities of wood.

Changes in work habits, business, and communications are likewise driving shifts in the paper sector and paperboard sector. Production of paper for printing has decreased as communication increasingly moves online, but demand for paperboard for packaging has gone up significantly – likely following the rise of online orders and the global trend of increased e-commerce (Figure 13).

**Figure 13 Wrapping and Packaging and Cartonboard in Major World Production Regions**



Source: Verkerk et al., 2022.

The expansion of export-oriented processing and manufacturing industries, notably in economies like Vietnam, Malaysia, and Indonesia, is also contributing significantly to the increased demand for raw timber materials.

The expanding growing middle-class creates new market opportunities for producers of a wide range of specialty products across the region – some of which struggled to find buyers in the past. The newly well-off have developed a taste for exotic forest fruits and nuts, soothing massage oils and perfumes, unique decorative and handicraft items, polished wooden musical instruments, and more.

Although many Asia-Pacific households still cook with fuelwood and charcoal, use of traditional woodfuels has declined significantly with increasing prosperity in the past two decades. In contrast, however, several economies of the region have become major

producers and consumers of wood chips and pellets used as commercial biofuels. China and India have emerged as major producers of wood chips and pellets for both domestic use and export, while Vietnam dominates the export market, annually shipping wood chips and pellets valued in excess of US\$3 billion (see Box 4). Australia, Indonesia, Malaysia, and Thailand also export more modest volumes of chips and pellets for use as biofuels, primarily to Japan and Korea.

Pressure on forests, driven by a wealthier population with greater purchasing power, is not only due to surging consumption of forest products. Global and regional demand for non-forest commodities create competing demands for land. Agriculture and extractive industries, particularly conversion for large-scale cash crops and mining operations, have been the primary drivers of deforestation and forest degradation in the region for the past two decades.

Increased prosperity drives a greater per capita consumption of meat, which in turn requires land for livestock grazing and for the production of feed grains such as maize and soy (OECD/FAO, 2025). Encroachment of forest land for agriculture remains one of the most significant challenges in many parts of the region.

Similarly, the growing demand for minerals and energy – to support industrial growth and luxury commodities – is leading to an increase of mining operations and associated infrastructure. As a result, there is fierce competition for land, often leading to further fragmentation of forest landscapes. A major challenge therefore is for economies to implement effective land-use planning that balances the interests of the agriculture, mining, and forestry sectors.

### **Trend 9 Increasing Expectations for Higher Management Standards**

Globally, there has been a steady push for improved forest management over the past several decades, complemented with efforts to better inform consumers of the impacts of their purchases on the environment. Consumers across the globe (including a growing number in Asia and the Pacific) are increasingly discriminating in purchasing eco-friendly products with assurances of sustainability (Verkerk et al., 2022). To some extent, this provides an inherent edge to forest-derived products, but only to the extent that consumers have confidence that raw materials are sourced from sustainably managed forests.

An early proxy for improved forest management was the formulation of formal long-term forest management plans. From 1990 to 2025, the area of forests in Asia and the Pacific brought under long-term management plans increased by 58 percent, from 239.5 million hectares to 377.9 million hectares.

Starting in the 1990s, considerable attention was also given to forest certification. Two main certification bodies emerged, the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC), both of which promote sustainable forest management through independent third-party certification that specific standards of forest management are being met. The area of Asia-Pacific forests certified by FSC grew from only 302 thousand hectares in 2000 to 8.5 million hectares in 2015 and 13.7 million hectares in 2025 (FSC, 2026). PEFC certification currently covers 35.1 million hectares of Asia-Pacific forests, mostly in Australia, Malaysia, China, Indonesia, New Zealand, Japan, Korea, India, Thailand, and Vietnam (PEFC, 2023). While these regional totals are significant, they represent only about 8 percent of FSC's global certification total and 10 percent of PEFC's.

Since the early 2000s, many importing economies have demanded legality assurances of forest products being imported, requiring evidence of due diligence of legality and chain-of-custody traceability. These requirements are covered under the Lacey Act of the United States, the European Union Timber Regulation with its supporting Forest Law Enforcement, Governance and Trade (FLEGT) program, the United Kingdom Timber Regulation, Australia's Illegal Logging Prohibition Act, and Japan's Clean Wood Act. These laws and regulations have significant impacts on Asia-Pacific producers who export to more discriminating markets (Astana, 2020; Zang et al., 2024).

Starting in the early 2000s, several economies in Asia engaged with the European Union to negotiate Voluntary Partnership Agreements (VPAs), intended as legally binding trade deals designed to ensure only legal, verified timber enters the EU market and to promote better forest governance. Indonesia and Vietnam concluded VPAs and Indonesia advanced to final FLEGT licensing. The value of such agreements and licenses has been thrown into question, however, due to evolving EU requirements for imports.

The European Union plans to implement the much stricter EU Deforestation Regulation (EUDR) at the end of 2026. The EUDR expands requirements to provide assurances that products and commodities imported into the European Union are not only legal, but have not contributed to deforestation (WRI, 2025). There is particular concern among Asia-Pacific exporters that the stringent EUDR requirements will prove onerous and constrain market access, especially for small producers (Mongabay, 2025b).

Parallel auditing of forests exists for forest-based carbon credit trading, designed to verify emissions reductions and carbon sequestration claims. Evaluations by independent third-party firms and regulatory bodies are intended to ensure that reported claims regarding biomass and conservation outcomes are accurate. A combination of satellite imagery and traditional ground-level field surveys is meant to mitigate the risks of fraud or over-

estimation. Utilizing these methods to create transparency is essential for rebuilding trust in carbon markets.

Private corporations are also increasingly held accountable by consumers and stockholders alike to adhere to environmental, social, and governance (ESG) standards. While some companies are faulted for “greenwashing” or misleading the public with their ESG claims, many corporations have seriously adopted sustainability principles and practices throughout their value chains.

### **Box 9 Private Sector Partnerships Encouraging Forest Change**

Private sector partnerships are increasingly becoming a significant force in promoting the transition towards sustainable forest management. Leading companies are integrating forest conservation into their core Environmental, Social, and Governance (ESG) strategies, setting long-term goals to reduce the net impact of their operations on forest resources and striving to achieve "forest-positive" outcomes.

Such strategies typically include stringent procurement policies that mandate wood sources to be sustainably certified or recycled. Companies also collaborate with non-governmental organizations to support smallholders in obtaining certification and improving forest management practices, thereby enhancing supply chain sustainability and transparency. These partnerships aim not only to generate economic benefits for local communities but also to promote climate-oriented forest management. This includes practices such as extending tree harvest cycles to increase carbon storage and incorporating native tree species to enhance biodiversity.

Simultaneously, environmental groups are urging major wood-buying corporations to leverage their market influence to strengthen supply chain oversight, prevent illegally or unsustainably harvested timber from entering production streams, and drive improvements in certification systems. As the Asia-Pacific region continues to expand its production and export of wooden furniture and other value-added forest products, the certification policies and sustainable procurement practices of key companies are expected to continue significantly influencing the regional forestry sector.

### **Trend 10 Advances in Technology**

The evolution of digital technology is rapidly changing how forests are managed across the globe. Tools such as high-resolution remote sensing and aerial drones are emerging as cornerstones of modern forest management. These innovations allow for the real-time monitoring of vast amounts of remote land, providing the data necessary to monitor biodiversity health, predict fire risks and detect subtle changes in canopy cover. With the

introduction of widely-available artificial intelligence models, economies across the region are scrambling to find ways to apply this new technology to their benefit.

The societal shift towards technology extends beyond high-level monitoring to include direct engagement with forest-dependent communities. Cellular network coverage has expanded rapidly across the region, and the widespread adoption of smartphones has created new opportunities for communication and market transactions. This democratization of data is increasingly empowering local stakeholders, bridging the geographical gap between central administrations and the remote regions they oversee.

Technological integration presents significant structural challenges that the region must address to ensure long-term success. The usefulness of digital tools is directly tied to the quality of physical infrastructure – power plants, cell towers, data centers, etc. – and to a economy’s ability to manage its own data efficiently and independently. There is a high risk that the management of these technologies will remain centralized or outsourced without significant investment in local capacity building. Training programs for local staff and investment in local institutions are essential to ensure that technical expertise – and the resulting decision-making power – remains firmly within the control of the communities most affected by forest policies.

By many analyses, the most significant technology-based risks for the forestry sector lie in over-reliance on digital solutions. A rising challenge for the region’s forest managers lies in applying new technological methods for collecting, processing, and analyzing forest information in ways that complement – rather than replace – direct observations, physical fieldwork, and traditional ecological knowledge.

Timber processing in Asia and the Pacific has shifted substantially in recent years. Producers have largely transitioned from traditional sawnwood and plywood to more advanced forms of engineered wood panels, such as particle board, medium density fiberboard, and more recently oriented strand board. The newest shifts in engineered timber (e.g., cross-laminated timber, laminated-veneer lumber, glue-laminated timber, I-joists and I-beams) were largely pioneered in Europe and North America, but production and application are now common in Japan, Korea, China, and Australia, and other economies of the region are expected to soon follow (Verkerk et al., 2022).

As large-diameter logs have become increasingly rare and expensive to source in Asia and the Pacific, producers in the region have excelled in production of wood products using small-diameter logs from fast-growing plantations by applying spindleless lathes to slice veneer sheets and precision sawing of small-dimension lumber. Other innovative processing technologies common in the region include furniture manufacturing using finger-joining of small pieces of solid wood (typically rubberwood) and pioneering the

use of bamboo wood composites in flooring, panels, furniture, kitchenware and countless other products. Bamboo products are particularly touted for their eco-friendly characteristics.

Other innovative forest-based products still in early stages of development include cellulosic fibers for textiles, wood foam, invisible wood, and bioplastics.

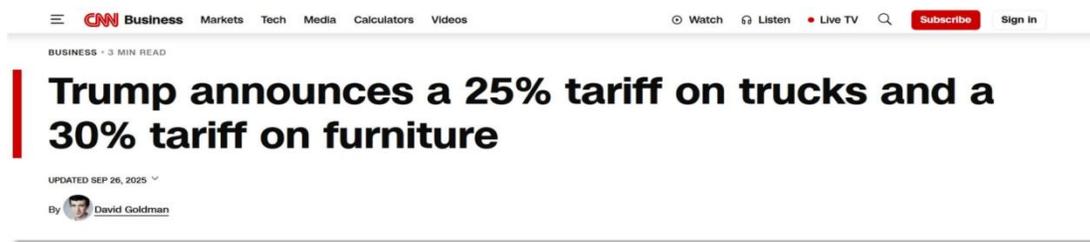
### **Trend 11 Geopolitical Tensions and Trade Disruptions**

As the region hosts both the world’s largest importers of timber and several of its most significant exporters, global market fluctuations are particularly disruptive to regional forest management. Unfortunately, the stability of the Asia-Pacific forestry sector has been increasingly compromised in recent years by a volatile global trade environment characterized by sudden policy shifts, geopolitical conflicts, and regulatory fluctuations.

Long-term investment in sustainable forest management may be perceived as higher risk due to the sudden shifts in tariffs, the imposition of non-tariff barriers, and the frequent recalibration of subsidies. Geopolitical tensions and trade disruptions are especially damaging to the forestry sector, which requires far-reaching planning and long-term investment commitments. These disruptions also heighten price volatility and increase transaction costs for exporters when they are forced to seek new markets.

The need to maintain local economies in the face of market turbulence may additionally lead to a weakening of forest governance and failure to reach environmental pledges, or hesitancy to commit to more stringent ones. Without a stable trade environment, sustainable management may be sacrificed for short-term economic benefits, complicating the region’s efforts to meet international climate and biodiversity targets.

#### **Box 10 Examples From the Past Five Years**



Source: CNN, 2025.

Perhaps the most notable example of the uncertainty looming over global trade is the 2025 announcement of significant U.S. tariffs on an unprecedented number of industries from virtually every other economy in the world. Given that Southeast Asian economies

such as Vietnam and Indonesia have become primary suppliers of furniture to the North American market, such aggressive trade barriers have strained wood-processing export industries in the region. The percentage of tariffs imposed and on various economies have also changed frequently and unpredictably, further exacerbating uncertainty in the market.

Climate legislation + Add to myFT

## EU delays ban on imports linked to deforestation for second time

Trading partners, including the US, and member states had pressured Brussels to postpone climate law further

Source: *Financial Times*, 2025.

Originally slated for 2024, the European Union’s repeated delays in implementing the Deforestation Regulation (EUDR) is an example of a lack of consistency in international environmental regulations. While these measures aim to ensure that products entering the EU market are deforestation-free and to encourage deforestation-free supply chains overall, the shifting timelines and evolving compliance requirements have left Asia-Pacific producers in a state of regulatory limbo. Adopting real-time traceability and supply chain verification systems to comply with the EU’s new restrictions requires substantial investment, and the uncertainty of the law’s final designs has led to a “wait-and-see” mentality, stalling progress in moving towards sustainable forestry.

## War in Ukraine halved the Russian lumber export prices

Since early 2022, Russian lumber export prices have fallen by 50%, attributed to import boycotts following the Ukraine invasion, reduced demand in China, and ruble depreciation.

Source: *Global Wood Markets Info*, 2023.

Geopolitical instability outside the region has the ability to trigger large shifts even within Asia-Pacific wood markets. The ongoing Russian-Ukraine conflict has played a large part in altering the flow of wood across the globe. International boycotts and the designation of Russian timber as “conflict wood” by major certification bodies (such as FSC and PEFC) led to a significant reduction in shipments and a nearly 50 percent drop in value in 2022 (Packaging Europe, 2024). The sudden loss of significant timber supply

led to a surge in the Global Hardwood Fiber Price Index and disrupted the availability of specialized wood products used in Asian manufacturing. Consequently, Asian producers have faced increased competition for raw materials and highly volatile input costs, complicating the economic viability of sustainable harvesting operations.



Source: *Bangkok Post*, 2025.

Intra-regional stability remains a critical factor for forestry trade, as evidenced by recent disruptions in mainland Southeast Asia. Tensions between Cambodia and Thailand have led to a sudden freeze on border trade, with trade volumes plummeting by 99.9 percent. In addition to safety concerns for those living in the area, closures such as this can cause major disruption to the local forest industry. They sever the legal transit routes for timber and wood-based products and can isolate producers from nearby processing hubs. This can also encourage the growth of informal or illegal trade networks as local communities struggle to maintain livelihoods, reversing gains made in forest governance and traceability.

## **Trend 12 Weakening Governance and Declining Development Assistance**

Globally, the forestry sector is navigating a period of profound transition in how forestry initiatives are funded and governed. Concerns have grown about the increasing ineffectiveness of multilateral systems. The slow progress in international climate change negotiations has dampened the momentum for large-scale, coordinated carbon sequestration and biodiversity projects. The erosion of the World Trade Organization (WTO) has further complicated the flow of forest products and the implementation of standardized environmental regulations.

Under the second administration of U.S. President Donald Trump, the United States abruptly closed the U.S. Agency for International Development and slashed bilateral assistance programs and contributions to United Nations agencies and other international organizations. Plans have also been announced to withdraw the United States from the

UN Framework Convention on Combating Climate Change and more than sixty other UN and international organizations, including several that deal with forests and forestry. Since the United States historically has provided a major portion of the funding for many of these organizations, a disengagement of the United States is likely to have far-reaching ramifications.

The significant reduction in international development assistance directed toward forestry poses a particular challenge for economies dependent on external funding – including several Asia-Pacific economies that have historically relied heavily on development assistance to sustain their forestry sectors. Encouragingly, many Asia-Pacific nations have proactively adapted to these declining levels of aid by developing independent fiscal mechanisms and domestic investment strategies. This shift toward self-reliance suggests that while the disruption of traditional aid models creates immediate budgetary pressures, it also accelerates a transition toward regional autonomy in forest management.

Nevertheless, the effectiveness of both domestic and international efforts is increasingly threatened by unstable and weakening governance in several economies in the region. Political upheavals have led to inconsistent policy application and a general fragmentation of land-use planning. This volatility has frequently led to institutional erosion of specialized bodies, particularly forest departments and research institutions. When these organizations are weakened, they lose the technical capacity and administrative authority required to enforce conservation laws or conduct the long-term research necessary for underpinning sustainable forest management.

## **Conclusion**

Forests are essential for providing the vast array of wood and forest products needed by modern society. They are also central to addressing the interconnected global challenges of climate change, water scarcity, biodiversity loss, energy shortages, and food insecurity. Forest managers in Asia and the Pacific face a monumental task in meeting these challenges – which in many instances will require a shift from traditional sectoral management toward more holistic landscape management approaches that balance wood production and climate mitigation with the immediate needs of other land uses.

It has become increasingly evident that forests must provide clear, tangible benefits to local communities, or they will inevitably be lost to alternative land uses. This economic reality underscores the fact that wood production and provision of clean reliable water supplies remain at the very heart of the forestry agenda. This underscores the benefits of trends that give greater emphasis to local supply chains and continued decentralization of forest management.

In an ever more turbulent world, Asia-Pacific policymakers will need to stay abreast of emerging trends and accept that major disruptions will likely be the norm for the foreseeable future. Effective forestry governance in the region will depend on the development of policies which provide regulatory stability, are tailored to domestic contexts, and maintain flexibility in the face of external shocks. Moving from high-level promises to tangible scale requires governance systems that ensure environmental resilience, well-designed financing, and, crucially, a fair system of benefit-sharing that protects equity alongside quality.

Because so many forestry issues such as cross-border haze, invasive species, carbon market fluctuations, and pest outbreaks are inherently transnational, regional cooperation is no longer an optional endeavor but an essential requirement for success. It is impossible for any single nation to effectively address these challenges in isolation. The Asia-Pacific region is fortunate to have a robust architecture of existing mechanisms, including APFNet, the Asia-Pacific Forestry Commission, AFoCO, RESULT Asia-Pacific, ASEAN, and APEC. Moving forward, strengthening these platforms will be vital to facilitate shared learning, pool scarce resources, and coordinate collective action.

The Asia-Pacific region is in a strong position to benefit from many positive trends in the region's forestry development over the past several decades. With a firm foundation of forest cover, increasing technical capacity, and growing societal support for ecosystem restoration and sustainable forest management, the region is well poised to move beyond being a passive recipient of global influences and disruptions. Rather, the region is likely to increasingly be the driver of global forest trends. This position of influence and leadership will be further accelerated by renewed commitment to regional cooperation, coordination, and collaboration.

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## **Annex I: Regional Groupings Reference**

### **East Asia Subregion**

Economies/Territories: China, Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea

### **South and Southeast Asia Subregion**

Economies/Territories: Bangladesh, Bhutan, Brunei Darussalam, Cambodia, India, Indonesia, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Timor-Leste, Vietnam

### **Western and Central Asia Subregion**

Economies/Territories: Afghanistan, Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tajikistan, Turkmenistan, United Arab Emirates, Uzbekistan, Yemen

### **Oceania**

Economies/Territories: American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States Minor Outlying Islands, Vanuatu, Wallis and Futuna Islands

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